Hawai`i's Bioenergy Master Plan
Kickoff Meeting / State Capitol Auditorium
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Remarks by David C. Cole

Aloha and good morning.

It is my pleasure to be here on behalf of our partners and colleagues at Hawai`i BioEnergy. As many of you know, Hawai`i BioEnergy was formed by Kamehameha Schools, Grove Farm and Maui Land & Pineapple Company to investigate renewable energy options using our combined land holdings – representing over ten percent of the state's total land and approximately half of the arable land.

We have selected experienced investor groups as partners, including Khosla Ventures, specialists in industrial processes, and Finistere Partners, a worldwide venture firm with deep knowledge of biological processes.

Today, I'm happy to announce that we have added Pierre Omidyar's Ohana Holdings as our sixth partner. Pierre and his colleague Michael Mohr bring considerable experience in new venture development to Hawai`i BioEnergy.

We have before us a great challenge, a great responsibility and a great opportunity.

Our challenge is to accept our role as global leaders in the green energy movement. By nature's design, our island archipelago is the most remote on earth. Yet, at the same time, we are richly endowed with the ingredients to become the world's leading example of efficient, clean and green energy. Per unit area, no other place has the combined geothermal, solar, wind, water, and wave potential for energy production.

Our responsibility is to our children who will be the ones penalized by mediocre measures and half-baked thinking. However, they will be the principal beneficiaries if we do things right.

Our opportunity is to make Hawai`i not only the greenest state in America, but also a breeding ground for the great new industries of tomorrow. We can make the creation, integration and deployment of green systems the largest segment of our economy. We can make the University of Hawai`i the Green MIT, and we can become host of an annual Green Davos. These global positions must be filled, and they are ours to take – if we have the courage and conviction to think and act like leaders.

What is most encouraging to me is that we have every advantage in rising to this challenge, meeting the responsibility and seizing the opportunity.

Our greatest advantage…one that became very clear to me last week in extraordinary discussions during the Hawaii Executive Conference on Maui…is that the secret to our success is not in embracing some new, alien or radical approach, but in becoming truer to what is most essentially Hawaiian. Our Native Hawaiian people knew that sustainable living was not an impossible dream for they achieved it in their daily lives.

We often imbue our discussions about new energy systems with technology laden jargon – so we tend to forget that we do our best work when drawing upon the rich tradition of sustainability in our islands, a tradition in which *pono* or balance in our daily lives cannot be achieved without *mālama ʻāina*, or caring for that which cares for us.

Allow me to describe the principles we believe should guide us as we go forward and then talk about some of the specifics we consider most important in the area of bioenergy.

Before I do that, however, I think it would be useful if I shared ideas that have shaped my own thinking on bioenergy development in our islands.

At Hawai`i Bioenergy, renewable energy is not an abstract issue. Although HBE was started by large landowners seeking a new use for their agricultural lands, we have, based on extensive research and analysis, evolved into a technology integrator and venture accelerator. Working in concert with power utilities, agriculturalists, designers and architects, our ambition is to help ensure that Hawai`i becomes a world leading example of how to live wisely with abundant food and energy in the post-petroleum era.

At HBE, this process has been guided by four foundational values:

1. Our projects will be *technology driven*.
2. Our projects will reflect our *commitment to sustainability* by minimizing waste and the environmental impact of air and water emissions.
3. Our projects will be shaped by *a new approach to agriculture*, employing the most advanced practices to increase efficiency and reduce environmental impact, and
4. And we will create *Local Businesses for Local Growth and Local Self-Sufficiency* – that is, local investors serving the local market, investing in local innovation and contributing to the local economy.

At HBE, we have studied not only what is possible in our state, but what is being done throughout the nation and around the world. The more we learn, the more we see that the issue of bioenergy in Hawai`i needs to be placed within a broader context. This begins by setting clear and measurable goals for our state, challenging our assumptions and asking ourselves tough questions about the relative value of our projects and policies. We cannot afford to chase trends or embrace superficial solutions that do not address our core vulnerabilities.

There's not just one reason to do this – there are three: our energy security, our economic security, and our environmental security. Each presents different metrics for success – and it is absolutely vital that we consider all of them carefully and collectively – but the first and most important is time.

Each year that passes, the people of Hawai`i send over $4 billion out of our islands to buy imported fuel. Each year that passes degrades our environment and contributes to global warming, threatening our shorelines and fragile ecosystems. And each year that passes, our economy suffers from the high cost of fuel, most recently evidenced by the demise of Aloha Airlines. We must act prudently, but with decisiveness and ambition to produce real results for our state in the very near term.

Therefore, beyond this welcome effort to establish a bioenergy master plan, we need to place bioenergy in an appropriate context, see it for what it is, part of a new energy paradigm, one approach among several that is vital to ensuring our energy, environmental, and economic security – while preserving and enriching our distinctive identity.

We need a State Energy Master Plan that considers every aspect of energy consumption in Hawai`i – from the broad range of technology options to the spectrum of behavioral changes required to reduce our greenhouse gas emissions and our dependence upon imported fuels. We must define our goals, not around a specific technology or fuel source, but upon several core metrics – including dramatic reductions in fuel imports, lasting reductions in carbon emissions and the creation of new jobs in industries from eco-tourism to green technology. In each, I believe bold goals are both required and achievable.

For example, I believe we could reduce our fuel imports by 80 percent by 2020, through a major public-private commitment, progressive policies and supportive incentives. To use the island of Maui to illustrate, peak demand in 2020 will be around 268MW. To reach 80% of demand, 214MW of renewable generation will need to be developed. We presently have existing and planned about 92MW of "as available" renewable power. Thus, a shortfall of 122MW to make up – or about 10MW per year (plus spinning reserve or other power firming methods). Certainly doable in light of advances in grid management and storage – making it possible for variable power sources like wind and solar to play a far greater role in total supply.

In transport, our size makes us uniquely suited to embrace electric and plug-in hybrid vehicles, both of which have been promised by automakers in 2010. No place in the country is better suited to having a greener fleet of vehicles in public and private transportation – and no place is more dependent upon imports and needs it more.

In aviation, I'm particularly happy to announce that HBE is a member of two teams that have advanced to the award consideration phase with the Defense Advanced Research Projects Agency to develop bio-jet fuel from algae in Hawai`i, fed by CO2 emissions from our power plants. Success in this initiative would revolutionize air travel and dramatically reduce the carbon impact of travelling to and from the islands, something that will be important for vacationers in an increasingly carbon conscious world.

In each case, we believe that technology and innovation play a critical role. We cannot predict the future, but we can prepare for it by incorporating flexibility and constant updating into our planning processes. This is what we do at HBE – develop core business models that will be able to incorporate a wide range of technological advances to achieve optimum efficiency and minimal impact on our environment. It is good business and it is good policymaking.

In the area of bioenergy, the two years of study that HBE has undertaken have validated the enormous potential that exists in Hawai`i, but also highlighted the serious limitations in our existing policy framework. For example, today our E10 blend requirements are met with imports from Brazil and Central America, at a cost to the state of almost $65 million in 2007.

The 13,000 tons of CO2 released into the atmosphere from shipping this ethanol to Hawai`i is the equivalent of our state using an additional 1.5 million gallons of gasoline. Because ethanol is not produced locally, we don't get the added benefit of power production, which has the potential to displace another 160,000 barrels of oil and 15,000 tons of CO2 emissions.

Plans are now underway to produce biodiesel from imported food oils. But think about it – replacing fossil fuel imports with biofuel imports does not achieve our goals of energy security, environmental security and economic security. We need another solution.

This solution is sustainably, efficiently produced bioenergy in Hawai`i at integrated plants in which waste streams are captured and transformed into additional products. And the only way to do this is by reforming our policies and incentives to encourage competitiveness, innovation and market development.

Our ethanol production credit has a cap that is far below the minimum efficient scale for an ethanol plant. Capping the credit discourages future investment in greater productivity and efficiency through process optimization and new technologies. Lifting this cap is a critical first step to bringing policy in line with our goals.

We must focus our efforts on innovation. Careful land management, to ensure that both food and fuel can be produced on our islands, requires new, highly efficient feedstock and processing technologies. One example is the algae project that HBE is now engaging in, but there are an abundance of pathways.

Attracting capital to the state for these projects will require incentives to reduce risk. One option worth considering is to increase the annual cap on the high tech tax incentive for advanced energy projects to reflect their scale.

Another is for the state to invest in strengthening its already well-regarded homegrown research centers, such as the Hawai`i Natural Energy Institute. Special focus should be given to testing highly efficient feedstocks suitable to our sub-tropical environment.

In terms of market development, our market pricing should reflect the lifecycle emissions of a fuel. Locally, sustainably produced biofuels should be given pricing preference over imported biofuel or biofuel produced from imported feedstock. Not only does this policy achieve our goals, it will allow us to be a leader in incorporating lifecycle emissions into our economy. The European Union is considering a policy along these lines and, as the U.S. moves toward a national carbon policy, this issue will only grow in importance.

There has been much speculation that the next administration will adopt a carbon cap and trade regime for greenhouse gas emissions. Such a program would place economic value on allowed emissions so companies would be motivated to reduce their outputs and sell unclaimed credits to other, less efficient operators. A cap and trade program would better reflect the environmental costs or hidden liabilities connected to our addiction to oil while stimulating innovation. If a federal initiative is slow to form, Hawai`i should join with California and others to create a regional cap and trade program.

We must also support development of the biofuels market by eliminating the critical hurdle to E85 roll-out: *the high infrastructure costs unique to our state*.

Hawai`i is one of only nine states without a single E85 station. This means that the alternative fuel vehicles in our state fleets technically meet that requirement, but do nothing to reduce emissions. And it means that 22,000 drivers of flex fuel vehicles cannot use this technology. Establishing an E85 corridor around Honolulu through infrastructure credits, a successful strategy employed by other states, would allow us to have the greatest impact with limited investment by the state.

Proposals on all of these issues went before our state legislature this session, among scores of other energy related proposals. And let's be honest here – very little was achieved, energy-wise, during the 2008 session.

It is time for our elected leadership to incorporate the best energy policies of other states to ensure the decisive action we need. I hope that today's meeting is a step in that direction.

But we also recognize that government alone cannot do this. That is why Hawai`i BioEnergy and its individual land-holding partners are committed to help lead a newly energized business coalition…one that began to take shape at last week's Hawaii Executive Conference. We will focus on investment, innovation and meeting our shared and urgent goal of making Hawai`i the greenest state in America and an example for the world.

Given the urgency, we must understand that inaction or halfway measures have profound negative consequences. Inaction is, in fact, the most dangerous action we can take. We must, therefore, acknowledge today that endless debate and lukewarm initiatives have a cost we cannot afford. We must be bold because the stakes are so high.

Inevitably other forces will come into play to slow us down or constrain us. The only way to overcome these forces is to aim high. And there are benefits to aiming high.

Consider the revenues returned to the state if we don't ship out $40 or $50 billion over the next decade to buy energy. Consider the jobs that will be created by keeping that money here and by becoming a leader in the fastest growing industry sector in the world. Consider the improved quality of life that will result from a cleaner and more efficient economy. Consider the competitive advantage our tourism business will have if we can invite visitors to the greenest paradise on earth. And consider the security we will have if our economy is no longer buffeted by escalating energy prices, volatile supplies and an uncertain world situation.

I ask you to consider these things, not for those of us who are sitting in this room today, but for our *keiki*, the ones who will inherit Hawai'i Nei and for those elsewhere in the world who are seeking answers for their children and a living example to help guide them.

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